

First Measurement of ψ' Production versus Transverse Momentum in $p + p$ collisions in the PHENIX experiment at RHIC

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Measuring the feed down of ψ' to J/ψ is an important ingredient needed to understand prompt J/ψ production and suppression in AA and in dA collisions at RHIC.

PHENIX has studied charmonium production in 200 GeV $p+p$ collisions through their decay to dielectrons at mid rapidity using data collected in 2006.

This high statistics data allows measurements of J/ψ production over the transverse momentum range of $0 < p_T < 10$ GeV/c and of the ψ' over the range of $0 < p_T < 7$ GeV/c. The measured ψ' to J/ψ production ratio agrees well with measurements by other experiments at different energies.